AMENDMENTS TO THE SPECIFICATION:

Please replace the heading at **page 3, line 24**, with the following rewritten version:

SUMMARY OF THE INVENTION ~~DISCLOSURE OF THE INVENTION~~

Please replace the paragraphs **beginning at page 4, line 1 and ending at page 10, line 20** with the following rewritten version:

And a first aspect of the present invention is characterized in that: (i) the discharge valve mechanism **(40)** is configured such that discharge openings **(29a, 29b)** are placed in an open or closed state by means of a plate-like valve element **(41)** which is a reed valve, and each of the discharge openings **(29a, 29b)** is formed at a respective location between a base end side and a leading end side of the valve element **(41)**, and (ii) a corresponding portion of the valve element **(41)** to the discharge opening **(29a)** on the leading end side has a bending strength set smaller than that of a corresponding portion of the valve element **(41)** to the discharge opening **(29b)** on the base end side.

In the arrangement of the first aspect of the present invention in which the discharge openings **(29a, 29b)** are placed in the open or closed state by means of the plate-like valve element **(41)** which is a reed valve, the discharge openings **(29a, 29b)** are scatteredly formed between the base end side and the leading end side of the valve element **(41)**, thereby making it possible to make the opening area of the discharge openings **(29a, 29b)** relatively large while maintaining the width of the valve element **(41)** at the same level as conventional. Stated another way, with this construction, there is no need to increases the size of the valve element **(41)** itself. Accordingly, since the opening area of the discharge openings **(29a, 29b)** is large, this makes it possible to prevent an excessive increase in discharge resistance, even

during the large-displacement operation of the compression mechanism **(20)**. Besides, since the valve element **(41)** is small in size and superior in opening/closing response, this makes it possible to prevent the occurrence of overcompression.

In addition, in the first aspect of the present invention, it is arranged such that the portions of the valve element **(41)** corresponding to the discharge openings **(29a, 29b)** differ from each other in bending strength. As a result of such arrangement, the opening area becomes larger when the pressure acting on the valve element **(41)** is great than when the pressure acting on the valve element **(41)** is small. Accordingly, when the operating displacement becomes greater thereby resulting in an increased flow rate, the difference in pressure between the inside and the outside of the compression chamber increases. Therefore the opening area becomes relatively large, thereby inhibiting discharge resistance. In addition, since the opening area can be made small during the small-displacement operation, this makes it possible to prevent the flow velocity from becoming excessively slow and to avoid a drop in response.

A second aspect of the present invention according to the compressor of the first invention is characterized in that: (i) two discharge openings **(29a, 29b)** are formed in the compression mechanism **(20)**, and (ii) the valve element **(41)** includes a small-width part **(41a)** of smaller width dimension between the corresponding portion to the discharge opening **(29b)** on the base end side and the corresponding portion to the discharge opening **(29a)** on the leading end side.

A third aspect of the present invention according to the compressor of the first aspect of the present invention is characterized in that: (i) two discharge openings **(29a, 29b)** are formed in the compression mechanism **(20)**, and (ii) the corresponding portion of the valve

element **(41)** to the discharge opening **(29a)** on the leading end side has a smaller width dimension than that of the corresponding portion of the valve element **(41)** to the discharge opening **(29b)** on the base end side.

In each of the second and third aspects ~~inventions~~, the leading end side portion of the valve element **(41)** is rendered more liable to bending than the base end side portion of the valve element **(41)**. As a result of such arrangement, during the small-displacement operation, the discharge opening **(29a)** situated on the leading end side is allowed to easily enter the open state, thereby providing a relatively small opening area. In such a relatively small opening-area state, refrigerant is discharged. On the other hand, during the large-displacement operation, both of the discharge openings **(29a, 29b)** are placed in the open state, thereby securing a relatively large opening area. In such a relatively large opening-area state, refrigerant is discharged. Accordingly, there occurs no drop in response during the small-displacement operation. There is no increase in discharge resistance because the flow velocity does not become excessively high during the large-displacement operation.

In addition, a fourth aspect of the present invention is characterized in that the discharge valve mechanism **(40)** comprises a first valve mechanism **(40A)** including a first valve element **(41A)** which is a reed valve operable to place a discharge opening **(29a)** in an open or closed state, and a second valve mechanism **(40B)** including a second valve element **(41B)** which is a poppet valve operable to place another discharge opening **(29b)** in an open or closed state. Here, the reed valve is a plate-like valve element so configured as to come in contact with an opening end surface of the discharge opening **(29a)**. The poppet valve is a valve element provided with a projected part so configured as to come in contact with an opening inner peripheral surface of the discharge opening **(29b)**.

In the fourth aspect of the present invention, it is arranged such that the discharge openings **(29a, 29b)** of the compression mechanism **(20)** are placed in the open or closed state by means of the first valve element **(41A)** (reed valve) and by means of the second valve element **(41B)** (poppet valve), respectively. As a result of such arrangement, it becomes possible to maintain high response properties of the reed valve. In addition, by virtue of the poppet valve, it is possible to achieve an increased discharge flow rate by gaining an opening area without any increase in the amount of refrigerant remaining in the discharge opening. Accordingly, during the small-displacement operation, the occurrence of overcompression is prevented by the opening of the first valve element **(41A)** of high response. On the other hand, during the large-displacement operation, the second valve element **(41B)**, too, is placed in the open state to provide a sufficient opening area, and the flow velocity of refrigerant is held low, thereby making it possible to achieve a reduction in discharge resistance.

Please replace the paragraphs beginning at page 8, line 7 and ending at page 13, line 20 with the following rewritten version:

Furthermore, a fifth aspect of the present invention according to the compressor of the fourth aspect of the present invention is characterized in that: (i) the first valve mechanism **(40A)** has a discharge port diameter (φDd1) and a seat diameter (φDs1) and the second valve mechanism **(40B)** has a discharge port diameter (φDd2) and a seat diameter (φDs2), wherein the discharge port diameters are set such that $\varphi Dd1 < \varphi Dd2$, while the seat diameters are set such that $\varphi Ds1 < \varphi Ds2$, and (ii) the first valve element **(41A)** has a lift amount (L1) and the second valve element **(41B)** has a lift amount (L2), wherein the lift amounts are set such that $L2 < L1$. Here, the discharge port diameters (φDd1, φDd2) are opening diameters of the

discharge openings **(29a, 29b)** on the compression chamber side, and the seat diameters (φDs1, φDs2) are opening diameters of the discharge openings **(29a, 29b)** on the contact side of the valve elements **(41A, 41B)** with the discharge openings **(29a, 29b)**.

In the fifth aspect of the present invention, the discharge port diameter (φDd1) and seat diameter (φDs1) of the first valve mechanism **(40A)** are set smaller than the discharge port diameter (φDd2) and seat diameter (φDs2) of the second valve mechanism **(40B)**. Such a setting makes it possible to reduce the size of the first valve element **(41A)** as the reed valve, and the opening/closing response of the first valve element **(41A)** during the small-displacement operation is improved to a satisfactory level. In addition, since the lift amount (L2) of the second valve element **(41B)** is smaller than the lift amount (L1) of the first valve element **(41A)**, this makes not only a lag in the closing of the second valve element (poppet valve) **(41B)** which is placed in the open or closed state during the large-displacement operation but also a backflow of refrigerant into the compression chamber **(25)** due to such a lag more unlikely to happen.

In addition, a sixth aspect of the present invention is characterized in that: (i) the discharge valve mechanism **(40)** is configured such that a plurality of discharge openings **(29a, 29b)** are placed in an open or closed state by means of a plate-like valve element **(43)**, and each of the discharge openings **(29a, 29b)** is formed at a respective location between a base end side and a leading end side of the valve element **(43)**, and (ii) a corresponding portion **(43a)** of the valve element **(43)** to the discharge opening **(29a)** on the leading end side has a smaller bending strength than that of a corresponding portion **(43b)** of the valve element **(43)** to the discharge opening **(29b)** on the base end side, and the corresponding portion **(43a)** to the discharge opening **(29a)** on the leading end side is formed as a reed valve

while the corresponding portion **(43b)** to the discharge opening **(29b)** on the base end side is formed as a poppet valve.

A seventh aspect of the present invention according to the compressor of the sixth aspect of the present invention is characterized in that: (i) two discharge openings **(29a, 29b)** are formed in the compression mechanism **(20)**, and (ii) the valve element **(43)** includes a small-width part **(43c)** of smaller width dimension between a corresponding portion of the valve element **(43)** to the discharge opening **(29b)** on the base end side and a corresponding portion of the valve element **(43)** to the discharge opening **(29a)** on the leading end side .

An eighth aspect of the present invention according to the compressor of the sixth aspect of the present invention is characterized in that: (i) two discharge openings **(29a, 29b)** are formed in the compression mechanism **(20)**, and (ii) a corresponding portion of the valve element **(43)** to the discharge opening **(29a)** on the leading end side has a smaller width dimension than that of a corresponding portion of the valve element **(43)** to the discharge opening **(29b)** on the base end side.

In each of the sixth to eighth aspects ~~inventions~~, the valve element **(43)** in the form of a single plate has the function of the reed valve **(43a)** as well as the function of the poppet valve **(43b)**, and it is designed such that the reed valve **(43a)** opens before the poppet valve **(43b)** does so. This accordingly ensures that the reed valve **(43a)** of high response is placed in the open state during the small-displacement operation. On the other hand, during the large-displacement operation, both of the reed valve **(43a)** and the poppet valve **(43b)** are placed in the open state, thereby providing a sufficient opening area. In addition, the reed valve **(43a)** is first placed in the open state without fail even during the large-displacement

operation, thereby preventing the flow velocity of refrigerant from excessively increasing in the opening early stage.

In addition, a ninth aspect of the present invention is characterized in that: (i) the discharge valve mechanism **(40)** comprises a first valve mechanism **(40A)** including a first valve element **(41A)** operable to place a discharge opening **(29a)** in an open or closed state, and a second valve mechanism **(40B)** including a second valve element **(41B)** operable to place another discharge opening **(29b)** in an open or closed state, and (ii) both the first valve element **(41A)** and the second valve element **(41B)** are formed by reed valves and the first valve element **(41A)** has a bending strength set smaller than that of the second valve element **(41B)**.

Finally, a tenth aspect of the present invention according to the compressor of the ninth aspect of the present invention is characterized in that the first valve element **(41A)** has a smaller thickness than that of the second valve element **(41B)**.

In each of the ninth and tenth aspects ~~inventions~~, the discharge valve mechanism **(40)** includes the two reed valves **(41A, 41B)**, and it is arranged such that one of the reed valves **(41A, 41B)** is placed in the open state before the other by the difference in bending strength therebetween. This ensures that the first reed valve **(41A)** of high response is placed in the open state during the small-displacement operation. On the other hand, during the large-displacement operation, both of the two reed valves **(41A, 41B)** are placed in the open state, thereby securing a sufficient opening area.

~~Effects~~

In accordance with the arrangement of the first aspect of the present invention, the plural discharge openings **(29a, 29b)** are placed in the open state by means of the single valve

element **(41)** which is a reed valve and, in addition, the number of discharge openings **(29a, 29b)** to be placed in the open state is varied depending on the flow rate and the pressure of discharge refrigerant. Accordingly, there is made an increase in opening area during the large-displacement operation of the compressor **(1)**, thereby inhibiting the resistance to discharge of the refrigerant. Besides, the rise in flow velocity and the occurrence of overcompression losses resulting from such a rise are also inhibited. In addition, during the small-displacement operation of the compressor **(1)**, the opening area is reduced, thereby preventing an excessive slowdown in flow velocity. Furthermore, the valve element **(41)** has a portion which has a smaller bending strength, so that the drop in response and the occurrence of overcompression losses due to such a response drop are inhibited. As just described, in accordance with the first aspect of the present invention, the occurrence of overcompression losses is prevented all over the operation range even when there are made variations in operating displacement, thereby making it possible to improve the operating efficiency to a higher level than conventional.

In addition, in accordance with the second and third aspects ~~inventions~~, a part of the valve element **(41)** is made small in width dimension in order that the opening/closing response of the valve element **(41)** will not fall off even during the small-displacement operation. This provides a simplified structure and therefore prevents the rise in cost.

In accordance with the fourth aspect of the present invention, the occurrence of overcompression losses during the small-displacement operation is inhibited by virtue of the high response of the reed valve **(41A)**, and the occurrence of overcompression losses during the large-displacement operation is inhibited by virtue of the sufficient opening area of the poppet valve **(41B)**. Accordingly, it is possible to achieve improvements in compressor

operating efficiency regardless of the operating displacement. In addition, especially during the large-displacement operation, the occurrence of overcompression in the discharge early stage is prevented by the reed valve **(41A)** and the occurrence of overcompression in the discharge later stage is prevented by the poppet valve **(41B)**, during the time that the rotary piston **(24)** makes a single revolution.

In addition, in accordance with the fifth aspect of the present invention, the relationship between the discharge port diameter (φDd1) of the reed valve **(41A)** and the discharge port diameter (φDd2) of the poppet valve **(41B)**, the relationship between the seat diameter (φDs1) of the reed valve **(41A)** and the seat diameter (φDs2) of the poppet valve **(41B)**, and the relationship between the lift amount (L1) of the reed valve **(41A)** and the seat diameter (L2) of the poppet valve **(41B)** are specified. This enhances the effects of the fourth aspect of the present invention and ensures that the operating efficiency of the compressor is improved.

In accordance with the sixth aspect of the present invention, the single valve element **(43)** has the function of the reed valve **(43a)** as well as the function of the poppet valve **(43b)** and, in addition, it is arranged such that the reed valve **(43a)** is placed in the open state before the poppet valve **(43b)** is placed in the open state. Accordingly, like the fourth aspect of the present invention, the occurrence of overcompression losses during the small-displacement operation is inhibited by virtue of the high response of the reed valve **(43a)**, and the occurrence of overcompression losses during the large-displacement operation is inhibited by virtue of the sufficient opening area on the side of the poppet valve **(43b)**. Accordingly, it is possible to achieve improvements in compressor operating efficiency regardless of the operating displacement.

In addition, in accordance with each of the seventh and eighth aspects ~~inventions~~, a part of the valve element **(43)** is made small in width dimension in order that the opening/closing response of the valve element **(43)** will not fall off even during the small-displacement operation. This provides a simplified structure and therefore prevents the rise in cost.

In accordance with the ninth aspect of the present invention, the two reed valves **(41A, 41B)** having different bending strengths are employed and, in addition, it is arranged such that the opening area of each of the discharge openings **(29a, 29b)** varies gradually depending on the pressure and the flow rate of refrigerant. As a result, it becomes possible to satisfy requirements such as a high response speed during the small-displacement operation and a sufficient opening area during the large-displacement operation. Accordingly, as in the each of the foregoing aspects ~~inventions~~, the ninth aspect of the present invention achieves efficient operations over the operation range from small to large displacement with a less overcompression loss.

Finally, in accordance with the tenth aspect of the present invention, it is possible to realize the operation/working-effect of the ninth aspect of the present invention by just making the two reed valves **(41A, 41B)** different in thickness from each other. This makes it possible to simplify the structure of the discharge valve mechanism **(40)**, thereby preventing the rise in costs.

Please replace the heading at **page 11, line 8**, with the following rewritten version:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS ~~BEST MODE FOR CARRYING OUT THE INVENTION~~